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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,345	12/27/2000	Masato Shimakawa	450100-02918	5389

20999 7590 04/19/2007	EXAMINER	
FROMMER LAWRENCE & HAUG	WOZNIAK, JAMES S	
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NEW YORK, NY 10151	ART UNIT	PAPER NUMBER
	2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	09/749,345	SHIMAKAWA ET AL.
	Examiner	Art Unit
	James S. Wozniak	2626

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   In response to the office action from 12/11/2006, the applicant has submitted a request

for continued examination, filed 1/16/2007, amending claims 1, 10, and 11, while arguing to

traverse the art rejection based on the limitation regarding the selection of a substitute dictionary

from a plurality of dictionaries as a function of a plurality of factors *(Amendment, Pages 10-11)*.

Applicant's arguments have been fully considered, however the previous rejection is maintained

due to the reasons listed below in the response to arguments. In addition, claims 10-11 and 13-

14 are rejected under 35 U.S.C. 101 in light of the statute's interpretation as set forth in the

"Interim Guidelines for Examination of Patent Applications for Patent Subject Matter

Eligibility".

Response to Arguments

2.   Applicant's arguments have been fully considered but they are not persuasive for the

following reasons:

The applicants traverse the 35 U.S.C. 103 rejection of **Claims 1, 10, and 11** on the

grounds that Edatsune *(U.S. Patent: 5,802,488)* fails to teach that a substitute dictionary is

selected as a function of a plurality of factors. In support of such arguments, the applicants point

out that responses are only a function of a single elapsed time factor *(Amendment, Page 11)*.

In response, the examiner points out that the aforementioned limitation is taught by the

combined teachings of Edatsune and Surace et al *(U.S. Patent: 6,144,938)*. Edatsune discloses

that substitute dictionaries can be selected as a function of age or a recognition number *(Col. 11,*

Lines 8-32). Thus, Edatsune discloses that a selection of a substitute dictionary for speech

synthesis can be a function of a plurality of single alternate factors, but not a combination of

factors. Surace, however, discloses that a combination of multiple user and time-based

personality factors can be used for selecting a speech synthesis data set *(Col. 14, Lines 13-45;*

Col. 15, Lines 3-49; Col. 16, Line 54- Col. 17, Line 6) for the benefit of providing an interactive

personality suited to a particular user's needs (Col. 16, Lines 40-53). Thus, it is the combination

of the teachings of Edatsune and Surace that teaches the aformentioned claim limitation.

The dependent claims are argued as further limiting rejected independent claims

(Amendment, Page 11), and thus, these claims also remain rejected for the above noted reasons.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   **Claims 10-11 and 13-14** are rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter.

Claim 11 is drawn to a "program" *per se* as recited in the preamble *(Line 2)* and as such

is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as

embodied in <u>computer readable media</u> are descriptive material *per se* and are not statutory

because they are not capable of causing functional change in the computer. See, e.g.,

Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held

nonstatutory). Such claimed data structures do not define any structural and functional

interrelationships between the data structure and other claimed aspects of the invention, which

permit the data structure's functionality to be realized. In contrast, a claimed <u>computer readable</u>

<u>medium encoded with a program data structure</u> defines structural and functional

interrelationships between the data structure and the *computer software and hardware*

components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or

expressions of the programs are not physical "things." They are neither computer components

nor statutory processes, as they are not "acts" being performed. Such claimed computer

programs do not define any structural and functional interrelationships between the computer

program and other claimed elements of a computer, which permit the computer program's

functionality to be realized.

Although the process in **claim 10** is directed to a seemingly patentable process for speech

synthesis, this claim is directed towards non-functional descriptive material (i.e., computer

program description) as evidenced by Claim 11. Claim 11 indicates that these steps are part of a

computer program. In claim 10, this program description is not stored on a tangible computer

readable medium encoded with a program that enables the program's functionality to be realized

when executed by a computer. Thus, claim 10 is directed to non-statutory subject matter for

reasons similar to claim 11.

Dependent **claims 13-14** fail to overcome the 35 U.S.C. 101 rejection as applied to

Claims 10-11, and thus, are also directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   **Claims 1, 3-7, and 9-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kamiya et al (U.S. Patent: 6,175,772) in view of Edatsune (U.S. Patent: 5,802,488), and further

in view of Surace et al *(U.S. Patent: 6,144,938)*.

With respect to **Claims 1 and 10**, Kamiya discloses:

Behavior-state changing means, responsive to a behavior event, for changing a behavior

state according to a behavior model *(behavior decision means, Col. 4, Lines 39-46; Col. 9, Line

26- Col. 10, Line 61)*;

Emotion-state changing means for changing an emotion state according to an emotion

model *(emotion generation, Col. 7, Line 33- Col. 8, Line 58)*;

Selecting means for selecting control information according to the behavior state and/or

the emotion state *(robot behavior decision means utilizing current emotion/behavior, Col. 9,

Line 26- Col. 10, Line 61)*; and

Synthesizing a voice signal based on an output from a behavior decision means *(Col. 10,*

Lines 25-43).

Although Kamiya does teach a means for speech synthesis, Kamiya does not specifically

disclose that synthesized speech is derived from substitutable generated text, wherein the text

may be substituted with a plurality of words from substitute dictionaries in accordance with

personality information and a plurality of determining factors. Edatsune, however, recites:

Text generating means for generating text in response to a behavior event *(content data*

generation in response to a user speech input, Col. 11, Lines 47-59; Fig. 2B, Element 4);

Substituting means, having a number of word substitute dictionaries, for substituting a

word or words included in the text with a word or words from the number of word substitute

dictionaries in accordance with pre-programmed personality information *(content vocabulary for*

particular levels used to substitute responses over time to provide personality with respect to an

interactive item's maturity, Col. 11, Line 7- Col. 12, Line 56, Fig. 2B);

Wherein the pre-programmed personality information includes a plurality of factors that

determine which of a plurality of substitute dictionaries is used by the substituting means

(selecting a content level vocabulary based on various times and a recognition number, Col. 11,

Lines 8-32); and

Wherein the voice produced by the speech synthesizing apparatus is a function of the

speech synthesizing information and pre-programmed personality information *(speech synthesis*

data, Col. 10, Lines 44-67; and maturity-related personality data, Col. 12, Lines 13-56).

Kamiya and Edatsune are analogous art because they are from a similar field of endeavor

in user-interactive objects utilizing speech synthesis. Thus, it would have been obvious to one of

ordinary skill in the art, at the time of invention, to modify the teachings of Kamiya with the

speech synthesis means utilizing maturity personality data as taught by Edatsune in order to

enable an interactive item to appear more life-like *(Edatsune, Col. 12, Lines 49-56)*.

Although Edatsune discloses a means for selecting a content vocabulary *(dictionary)* for a

one of a plurality of age-based personalities based on a plurality of elapsed times (factors), the

dictionary selection in Edatsune is based only upon a single type of factor (only age personality),

and not a combination of factors, as is required by the presently claimed invention. Surace,

however, recites selecting a particular synthesis dictionary *(prompt suite)* based on an additional

user-based personality factor *(Col. 14, Lines 13-45; Col. 15, Lines 3-49; Col. 16, Line 54-Col.

17, Line 6)*. Surace further mentions the combination of user and time based information in

selecting a particular synthesized prompt *(Col. 15, Lines 3-22)*.

Kamiya, Edatsune, and Surace are analogous art because they are from a similar field of

endeavor in user-interactive systems utilizing speech synthesis. Thus, it would have been

obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of

Kamiya in view of Edatsune with the user-based personality factor taught by Surace in order to

provide an interactive personality that is best suited to a particular user's needs (Col. 16, Lines

40-53).

With respect to **Claim 3**, Kamiya further recites:

The selecting means selects the control information also according to the result of

detection achieved by a detecting means for detecting an external condition *(voice and tactile

command inputs, Col. 5, Line 5- Col. 6-, Line 12; Col. 9, Line 26- Col. 10, Line 61)*.

With respect to **Claim 4**, Kamiya further recites:

Wherein the selecting means selects the control information also according to the

individual information held by the holding means *(learning user preferences and habits, Col. 6,*

Lines 13-40).

With respect to **Claim 5**, Edatsune additionally discloses:

Wherein the selecting means selects the control information also according to the elapsed

time counted by the counting means *(clock for determining an elapsed time, Col. 10, Line 44-*

Col. 11, Line 32; Fig. 3A, Element 3).

With respect to **Claim 6**, Kamiya further recites:

The selecting means selects the control information also according to the accumulated

number of times the behavior state changing means changes behavior or the emotion state

changing means changes emotion *(accumulating a behavior change response in a neural*

network to determine future behavior, Col. 6, Lines 14-40; Col. 9, Lines 26-44).

With respect to **Claim 7**, Edatsune additionally discloses:

The personality information is included in the control information selected by the

selecting means *(maturity/age related information used to control a response to a user, Col. 12,*

Lines 13-56).

With respect to **Claim 9**, Kamiya further shows:

The speech synthesizing apparatus is a robot (Fig. 1).

Claim 11 contains subject matter similar to Claims 1 and 10, and thus, is rejected for the

same reasons. Also, Kamiya recites a robot object that produces synthesized speech in response

to external stimuli *(Col. 2, Lines 12-35; Col. 4, Lines 39-46)* that would require an inherent

computer memory medium, similar to that utilized to store emotion models *(Col. 7, Lines 33-46)*, to store the steps necessary to accomplish speech synthesis.

With respect to **Claims 12-14,** Edatsune teaches personality information indicative of an interactive object's age *(Col. 12, Lines 13-56).*

7.   **Claims 2 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya et al *(U.S. Patent: 6,175,772)* in view of Edatsune *(U.S. Patent: 5,802,488)*, further in view of Surace et al *(U.S. Patent: 6,144,938)*, and yet further in view of Holm et al *(U.S. Patent: 6,260,016).*

With respect to **Claim 2,** Kamiya in view of Edatsune, and further in view of Surace teaches the speech synthesis apparatus utilizing speech synthesis data and maturity/age related personality data, as applied to Claim 1. Kamiya in view of Edatsune, and further in view of Surace, does not specifically suggest that speech synthesis data includes parameters such as pitch or utterance speed, however Holm teaches the use of such parameters in speech synthesis *(pitch parameter, Col. 9, Lines 3-16; and speech rate, Col. 8, Line 49).*

Kamiya, Edatsune, Surace, and Holm are analogous art because they are from a similar field of endeavor in speech synthesis systems. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Kamiya in view of Edatsune, and further in view of Surace with the speech synthesis parameters taught by Holm in order to ensure a natural prosody for synthesized speech (Holm, Col. 1, Lines 5-9).

With respect to **Claim 8,** Holm further teaches converting the style of a text input according to a prosody *(Col. 3, Lines 29-60).*

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Fukui et al *(U.S. Patent: 5,918,222)*- discloses changing a synthesized speech response based on a plurality of emotional factors *(specifically, see Fig. 189)*.

Lee et al (U.S. Patent: 6,088,673)- discloses a method for speech synthesis according to age and gender information.

Gabai et al *(U.S. Patent: 6,290,566)*- discloses changing speech synthesis vocabularies based as a factor of time and emotional states *(specifically, see Col. 50, Line 11- Col. 51, Line 17 and Figs. 42-43)*.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
3/7/2007

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